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Remarks

Applicants thank the Examiner for kindly indicating that claims 24-37, 38-47, 52-56, 60 and 65 would be allowable if rewritten in independent form. Applicants have done this in the form of new claims 67-69. Applicants also thank the Examiner for granting Applicants' representative, Allison Johnson, the courtesy of a teleconference interview on January 3, 2006.

Claims 1, 2, 9, 11, 14, 16, 19, 20, 25, 29, 31, 39, 40, 43, 44, 47, 53-56, and 63 have been amended. Claims 10, 59, and 60 have been canceled. New claims 67-70 have been added. The amendments to claims 2 and 19 were made to correct clerical errors and not for reasons related to patentability. Claims 14, 16 and 56 have been amended for clarity and not for reasons related to patentability. The amendments to claims 9, 11 and 20 were necessitated due to the amendments to claim 1. Support for the amendments to the claims and the new claims can be found in general throughout Applicants' Specification and in particular, for example, as follows: claim 1, original claim 10, claim 63, original claim 66, claim 67, original claim 24, claim 68, original claim 38, claim 69, original claim 52, claim 70, original claim 9. Applicants reserve the right to prosecute the amended claims in their original form in a continuing application.

The Declaration Submitted on December 8, 2003, stands objected to under 37 C.F.R. § 1.67. The Declaration states, "(3) I believe that the other inventors listed below and I are the original, first, and joint inventors or discoverers of the invention or discovery in FLUORESCENCE CORRELATION SPECTROSCOPY INSTRUMENT AND METHOD OF USING THE SAME described and claimed therein and for which a patent is sought." The Declaration further identifies the application serial number and filing date, and the two co-inventors, David E. Wolf and Dylan A. Bulseco, both of whom are signatories to the Declaration (i.e., the signature of David E. Wolf appears on page 1 of the Declaration, and the signature of Dylan A. Bulseco appears on page 2). Applicants submit that the Declaration complies with 37 C.F.R. § 1.67 and M.P.E.P. §§ 602.01 and 602.02 because it contains a statement from each person making the declaration that he believes the named inventors are the original, first and joint inventors of the subject matter that is claimed and for which a patent is sought. Accordingly,

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Applicants submit that the Declaration meets the requirements under 37 C.F.R. § 1.67, and respectfully request that the objection thereto be withdrawn.

The Information Disclosure Statement received on July 28, 2005, stands objected to under 37 C.F.R. § 1.98. Applicants submit that a substitute Form 1449 listing the reference being submitted was included in the July 28, 2005 submission to the Patent Office as evidenced by the original and date stamped Return Receipt Postcard that was included therewith, a copy of which is attached at Tab 1. Accordingly, Applicants submit that the substitute Form PTO-1449 was timely submitted and that the submitted Information Disclosure Statement was in compliance with 37 C.F.R. 1.98, and respectfully request that the objection to the Information Disclosure Statement under 37 C.F.R. 1.98 be withdrawn. To facilitate the Examiner's review of the same, Applicants include herewith a copy of the substitute Form 1449 (also attached at Tab 1), and respectfully request that the Examiner indicate his review of the cited reference by initialing each entry on the substitute Form PTO-1449, and returning a copy of the initialed substitute Form PTO-1449 to Applicants at the address of record.

Applicants submit that the amendment to claim 2, which now recites, in relevant part, "said emission filter adapted to transmit light having a wavelength range greater than the range of wavelengths emitted by said excitation source," renders moot the objection thereto, and request that the same be withdrawn.

Regarding the objection to claim 3, Applicants note that the Summary section of Applicants' Specification discloses that a lens, a fiber optic and combinations thereof are examples of light focusing elements, and that the light focusing element can be a fiber optic (see Applicants' Specification, page 2, line 20 and line 29). Applicants submit, therefore, that claim 3 is clear as written, and respectfully request that the objection thereto be withdrawn.

Applicants submit that the amendments to claims 14, 16 and 56, which now recite in relevant part, "linear axial relationship," render moot the rejection thereto, and request that the same be withdrawn.

Applicants submit that the amendment to claim 62, which now depends from claim 61, renders moot the rejection of claim 62 under 35 U.S.C. § 112, second paragraph, and request that it be withdrawn.

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Claims 1-2, 4, 5, 18, 57-58, 61, 62 and 64 stand rejected under 35 U.S.C. § 103 over Barbieri et al. US 6,603,546 (the '546 patent).

Applicants submit that the amendment to claim 1, which now includes the language of claim 10, renders moot the rejection of claims 1, 2, 4, 5, 18, 57-58, 61, 62 and 64 under 35 U.S.C. § 103 over the '546 patent, and respectfully request that it be withdrawn.

Claims 3 and 6 stand rejected under 35 U.S.C. § 103 over the '546 patent in view of Alfano et al. US 6,208,886 (the '886 patent). Claim 3 is dependant on claim 1 and further recites that the light focusing element includes a fiber optic. Claim 6 depends from claim 3. Applicants submit that the amendment to claim 1 renders moot the rejection of claims 3 and 6 under 35 U.S.C. § 103 over the '546 patent in view of the '886 patent, and request that it be withdrawn.

Claims 1, 7-9, 11-23, 48-51, and 63 stand rejected under 35 U.S.C. § 103 over the '546 patent in view of Berthold et al. US 5,220,172 (the '172 patent).

The '546 patent discloses a multiple channel spectrometer capable of analyzing large volumes of samples by the fluorescence emitted by the samples.

The '172 patent discloses an apparatus for measuring lignin concentration in a undiluted sample of wood pulp or black liquor.

Claim 1 has been amended to include a portion of the language of claim 10, which originally stood rejected under 35 U.S.C. § 103 over the '546 patent in view of the '172 patent. Accordingly, Applicants address the afore-mentioned rejection with respect to newly amended claim 1. Claim 1 is now directed to a portable fluorescence correlation spectroscopy instrument that includes a sample flow chamber, an excitation source, at least one light focusing element positioned to receive light emitted by the excitation source, a detector for detecting light, the detector positioned to receive light emitted by a sample excited by said excitation source, and a correlator coupled to said detector, said correlator for processing data received at said detector and providing data comprising autocorrelation data, crosscorrelation data, or a combination thereof. It is undisputed that the '546 patent does not teach a fluorescence correlation spectroscopy instrument that includes a sample flow chamber. The '546 patent discloses a spectrometer that is useful for screening components such as new drug candidates. The spectrometer of the '546

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patent includes of a number of individual spectrometer systems that simultaneously process sample that is present in separate chambers or wells (the '546 patent, col. 3, lines 52-55). The samples are described as being located on a plate; an x-y movement device carries the plate and permits a first group of chambers to be respectively and simultaneously exposed to a light beam for analysis (*id.* at lines 56-62). The '546 patent further explains that the x-y device may be moved in a two dimensional, planar manner to allow another group of chambers of the plate to a light beam for analysis (*id.* at lines 62-65). The '546 patent does not teach or suggest employing a sample flow chamber in the spectrometer disclosed therein. The '546 patent also does not provide the skilled artisan with any reason to employ a sample flow chamber in the instrument disclosed therein. Moreover, there is no teaching or suggestion in the '546 patent as to how to employ a sample flow chamber in the instrument of the '546 patent to screen drug candidates, a stated object of the '546 patent. Therefore, the skilled artisan would have no reason to *sua sponte* modify the system of the '546 patent to include a sample flow chamber.

The '172 patent does not cure the deficiencies of the '546 patent. The '172 patent is directed to monitoring the real time lignin content in paper product manufacturing processes. The '172 patent is further concerned with real time process control feedback and feed forward control. The '172 patent does not teach or suggest anything about drug candidate screening, which is a primary focus of the '546 patent. Therefore, the skilled artisan, familiar with the instrument of the '546 patent would have no reason to look to the '172 patent. For this reason alone, the rejection of claim 1 under 35 U.S.C. § 103 over the '546 patent in view of the '172 patent is unwarranted and Applicants request that it be withdrawn.

The '172 patent is further deficient for at least the following additional reasons. Nothing in the '172 patent directs the skilled artisan to modify the instrument of the '546 patent to include a sample flow chamber. The '172 patent does not teach or suggest employing a sample flow chamber in a device for screening new drug candidates. The '172 patent also does not teach or suggest why a sample flow chamber would be suitable for use in the instrument of the '546 patent or how the instrument of the '546 patent could function as intended with a sample flow chamber. Therefore, the skilled artisan would have no reason to modify the instrument of the '546 patent to include a sample flow

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chamber and further would have no idea how to employ a sample flow chamber in the instrument of the '546 patent. Applicants submit, therefore, that the rejection of claim 1, formerly claim 10, under 35 U.S.C. § 103 over '546 patent in view of the '172 patent has been overcome, and respectfully request that it be withdrawn.

Applicants submit that claims 7-9, 11-23, and 48-51, which depend directly or indirectly from claim 1, are distinguishable under 35 U.S.C. § 103 over '546 patent in view of the '172 patent for at least the same reasons set forth above in distinguishing claim 1, and respectfully request that the rejection thereof be withdrawn.

Claim 63, formerly claim 66, is directed to a portable fluorescence correlation spectroscopy instrument that includes a chamber through which a liquid sample can flow, the chamber being positioned such that the confocal plane of the instrument is contained within the chamber, a monochromatic light source, a light focusing device adapted to focus light emitted by the monochromatic light source on a sample, a detector capable of detecting light, a fiber optic positioned to receive light emitted by a sample excited by the light source, the fiber optic being coupled to the detector, and a correlator coupled to the detector, the correlator being capable of processing data received at the detector and providing data comprising autocorrelation data, crosscorrelation data, or a combination thereof. Applicants submit that claim 63 is distinguishable under 35 U.S.C. § 103 over '546 patent in view of the '172 patent for at least the same reasons set forth above in distinguishing claim 1, and respectfully request that the rejection thereof be withdrawn.

Claim 70, which is original claim 9 rewritten in independent form, is directed to a portable fluorescence correlation spectroscopy instrument that includes a sample chamber, an excitation source, a first light focusing element that includes a fiber optic positioned to receive light emitted by the excitation source, a second light focusing element, the fiber optic having a first end disposed in the sample chamber, the second light focusing element being focused on the first end of said fiber optic, a detector for detecting light, said detector positioned to receive light emitted by a sample excited by said excitation source, and a correlator coupled to said detector, the correlator for processing data received at the detector and providing data that includes autocorrelation data, crosscorrelation data, or a combination thereof. Figure 14 of Applicants' Specification illustrates one example configuration of the instrument of claim 9. It is

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undisputed that the '546 patent does not teach or suggest a fluorescence correlation spectroscopy instrument that includes a first light focusing element that includes a fiber optic positioned to receive light emitted by an excitation source and having a first end disposed in a sample chamber, and a second light focusing element focused on the first end of the fiber optic.


The '172 patent does not cure the deficiencies of the '546 patent. The '172 patent does not teach or suggest focusing a second light focusing element on the end of a fiber optic. The October 5, 2005 Office action cites Fig. 6a of the '172 patent in support of the rejection of claim 9. However, Fig. 6a depicts a probe 40 that includes two fiber optics, an excitation fiber and an emission or detector fiber. The probe 40 of the '172 patent is not disposed in a sample chamber, and the '172 patent does not teach or suggest that the emission fiber is focused on the end of the excitation fiber of the device depicted in Fig. 6a. Therefore, the proposed combination of the '546 patent and the '172 patent lacks a required element of the instrument of claim 70. Accordingly, a *prima facie* case of obviousness of claim 70 has not been made. Applicants submit, therefore, that the rejection of claim 70 under 35 U.S.C. § 103 over '546 patent in view of the '172 patent is unwarranted, and request that it be withdrawn.

Applicants submit that the claims now pending in the application are in condition for allowance and such action is respectfully requested. Applicants invite the Examiner to telephone the undersigned should a teleconference interview facilitate prosecution of the application.

Please charge any additional fees that may be required or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

Date: January 4, 2006


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